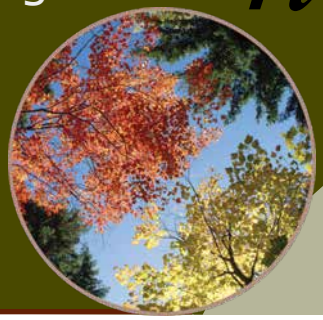
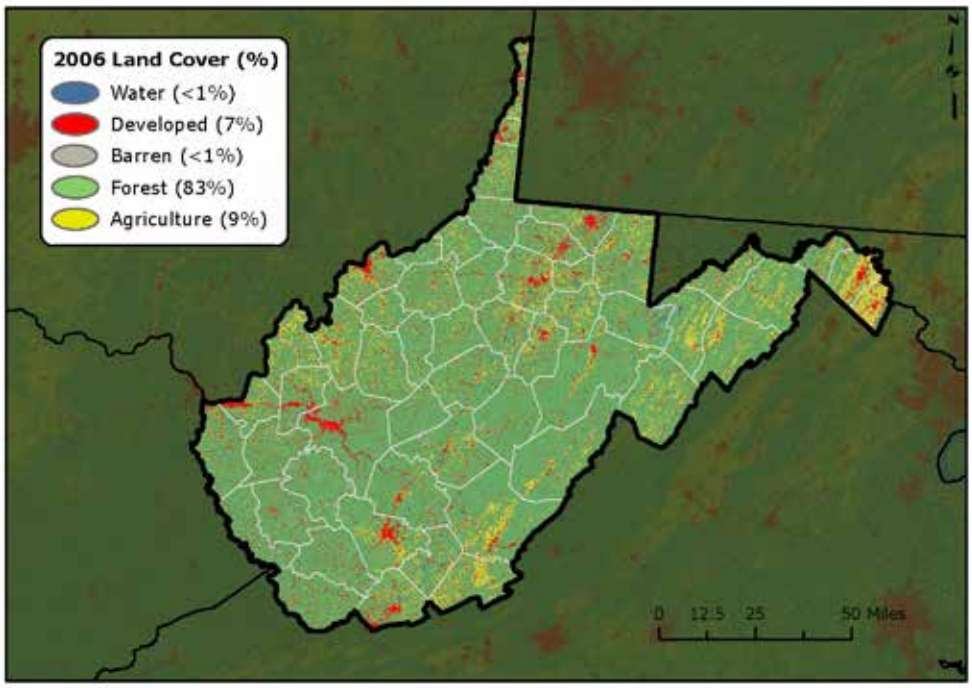
2013 Forest Health highlights

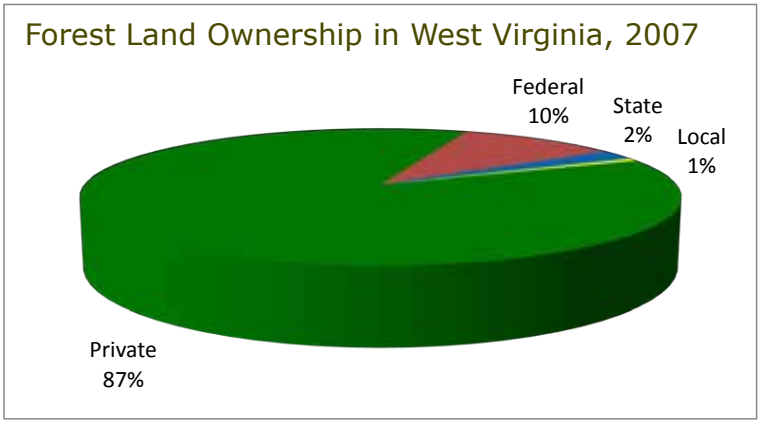
West Virginia



The Resource

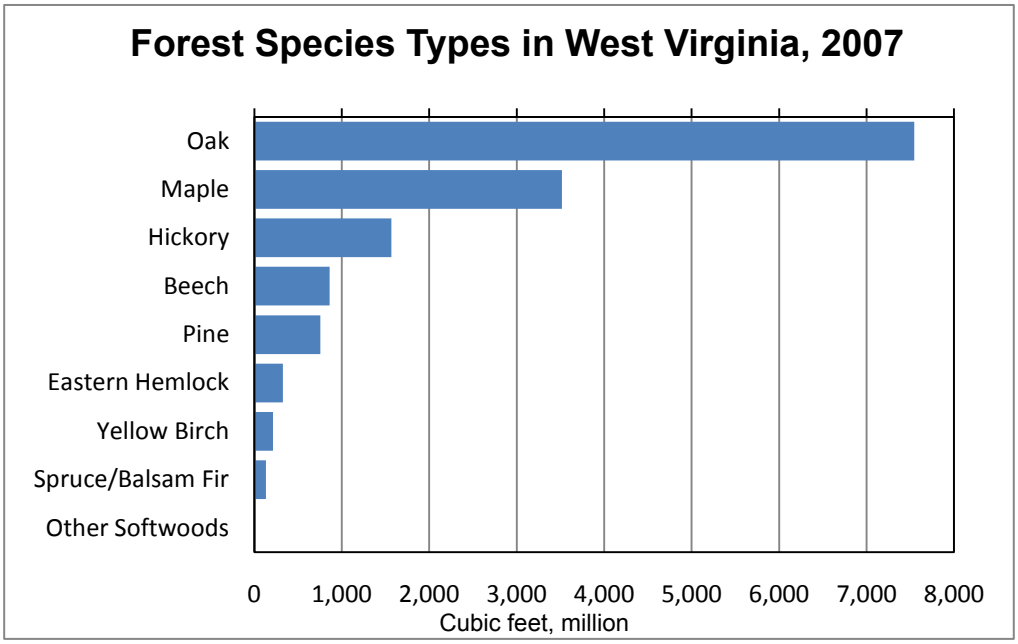
The West Virginia landscape is dominated by more than 11.8 million acres of forest. Due in large part to its varied topography, the forest is a rich diversity of oaks, hickories, spruce, pines, and the State tree—sugar maple. Of all the forests in West Virginia, 90 percent are privately owned, but there are 9 State forests, 36 State parks, and 56 wildlife management areas that provide public enjoyment.





Forest Health Programs

State forestry agencies work in partnership with the U.S. Forest Service to monitor forest conditions and trends in their State and respond to pest outbreaks to protect the forest resource.



Aerial Surveys

No aerial surveys were conducted; there is no aerial survey map for this fiscal year.

Forest Stewardship

The Forest Management Program is administered by the West Virginia Division of Forestry. The intent of the program is to help private, nonindustrial forest landowners to improve their forests by managing them in a sound, scientific manner. Within this program, the Forest Stewardship Program offers a forest management plan written by a professional forester based on the landowner's objectives. Other programs, Environmental Quality Incentives Program, Conservation Reserve Enhancement Program, and Wildlife Habitat Incentive Program, provide financial assistance for recreation, forest improvement, soil and water protection, wetlands protection, fisheries habitat enhancement, wildlife habitat enhancement, tree planting, and improvement of forest roads. In FY 2013, 79 stewardship plans were completed for a total of 10,417 acres. Currently 214,533 acres are managed under stewardship plans.

Special Issues—Gypsy Moth

Gypsy Moth Programs

The objectives of the West Virginia Department of Agriculture's Gypsy Moth Program are to continue to minimize the adverse impact on forest resources, preserve esthetic values, protect people from the annoyance and health problems that can occur from contact with large numbers of gypsy moth caterpillars, and slow the spread of gypsy moth by reducing populations on the advancing front.

Gypsy Moth Quarantine

West Virginia currently has 44 counties that are regulated and considered generally infested by gypsy moth. The West Virginia Department of Agriculture regulates the movement of articles out of these counties into nonquarantined counties or States. No new counties were quarantined in 2013.

Gypsy Moth Population

West Virginia's gypsy moth population in 2013 was increasing but still remained low. The fungus *Entomophaga maimaiga* was active, but there is an increase of large healthy egg masses, especially at the higher elevations. Potential defoliating populations for 2014 may occur in the eastern portion of the State as populations begin to increase.

Gypsy Moth Cooperative State–County–Landowner (CSCL) Program

West Virginia Department of Agriculture staff are currently responding to landowner requests and completing surveys on forested lands in West Virginia, to determine areas at risk for defoliation or mortality from gypsy moth, or both, in spring 2014. Staff is currently using 1/40-acre plot surveys to determine areas at risk and planned to have surveys completed by late December.

Larval insecticide treatments were conducted on 3,777 acres in the CSCL Program in 2013. Mimic 2LV was used to treat the blocks in Grant and Preston Counties. At the time of this writing it is uncertain if qualifying acres will be determined for 2014 treatments.

Gypsy Moth Regulatory Actions

There were no regulatory insecticide treatments in West Virginia in 2013.

Staff visited 51 sites to investigate the movement of articles capable of transporting the gypsy moth into uninfested areas.

Staff conducted four inspections at vehicle weigh stations along interstate highways to enforce State and Federal gypsy moth quarantines.

Gypsy Moth Slow the Spread (STS)

There were no treatments within the STS area for 2013, and no treatments are planned for 2014. Gypsy moth populations are stagnated and are low in the western portion of the

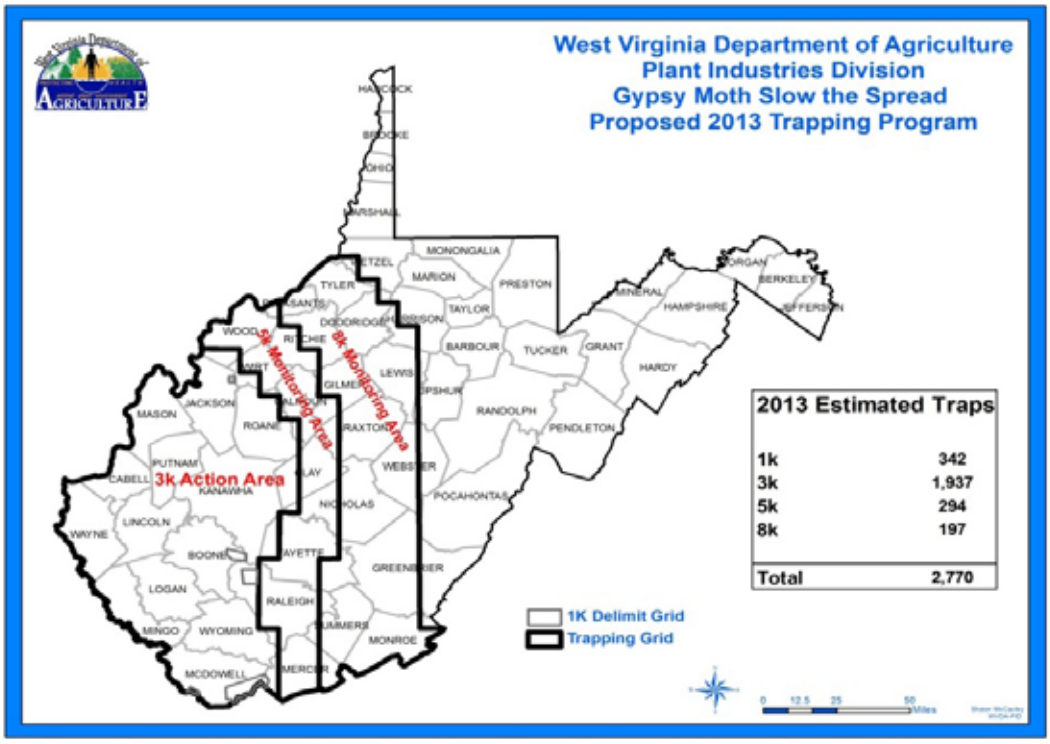
STS program area of West Virginia. The West Virginia Department of Agriculture trapped 57,062 male gypsy moths in 2013 compared with 46,459 males in 2012. The increase in moth catch was primarily in the eastern mountainous portion of the STS monitoring area.

Traps in West Virginia by Trapping Grid, 2013

Grid	Proposed	Omits	Set
1k	342	8	334
3k	1,937	0	1,937
5k	294	0	294
8k	197	0	197
Totals	**2,770**	**8**	**2,762**

Project boundary	Proposed	Omits	Set
STS Action Area	2,279	8	2,271
STS Monitoring	491	0	491
Random	0	0	0
Totals	**2,770**	**8**	**2,762**

Trap type	Proposed	Omits	Set
Delta	2,005	0	2,005
Milk carton	765	8	757
Random	0	0	0
Totals	**2,770**	**8**	**2,762**



Forest Health Protection Programs

Diseases

Beech Bark Disease

Scion Collection—Scale challenges were done in July-August 2011 and were assessed in July-August 2012. Data on trees that were chosen to be challenged the year prior and were shown to be free of any scale colonization were collected and sent to Jennifer Koch, research geneticist for the U.S. Forest Service in Delaware, OH. In February 2013, based on the data submitted to the U.S. Forest Service, scion was collected from the selected beech. Beech scion was collected by using either a Big Shot (sling shot) or a small caliber firearm on the selected trees and was sent to the U.S. Forest Service in Delaware, OH, to be grafted to root stock and tested further for scale resistance. The objective of this work is to propagate resistant beech trees for the establishment of seed orchards to provide seed to generate resistant seedlings for restoration plantings.

Monitoring Plots—Nine beech stands were established to serve as permanent survey sites. Survey sites were chosen in a north to south/west direction as best as possible throughout the State but were entirely influenced by the resource of beech. Survey sites consisted of a minimum of 20 mature beech trees greater than 9 inches in diameter. Trees were examined for the amount of scale based on a 0–5 scale rating system and the presence of *Neonectria*. Additionally, survey trees were measured for d.b.h., dieback, foliar discoloration, and crown transparency. Presence of decay and associated decay fungi were assessed. All trees located were marked using Global Positioning System coordinates and flagging. Stand descriptions included elevation, aspect, general soil conditions, and prevalent vegetative types. Any variance in scale development on infested or resistant beech will be monitored in subsequent years. Putatively resistant beech identified through this survey will be available for scion collection.

Matsucoccus Scale and *Caliciopsis* Canker of White Pine

In 2013 white pine was again monitored in four 1/10-acre plots, since there was enough live and dead volume of white pine to compare with last year. Overall changes in the data would not be many, but it is still valuable to continue to measure these various trends for several more years before concluding anything about this insect/disease complex. The objective is to monitor changes in live versus dead volume in white pine due to the presence of *Matsucoccus* scale and *Caliciopsis* canker and other secondary pathogens. Ongoing research at the University of Georgia is actually discovering that *Calciopsis pinea* is only found on less than 20 percent of symptomatic trees—the scale insect seems to be the common denominator, with *C. pinea* being just one of several secondary pathogens that may be associated. *Caliciopsis* canker just happens to be an easy one to spot on the surface of the bark because of the fruiting bodies. The bottom line over time will be changes in live versus dead volume in white pine. This work is being done in collaboration between the Virginia Division of Forestry, University of Georgia, and the U.S. Forest Service, Athens, GA.

This year's observations included a decrease in the number of "symptomatic trees" (with flagged branches) and a decrease in the occurrence of the fruiting bodies compared with last year. The sapling/seedling cohort at the monitoring sites is declining, possibly because many of the sapling/seedling class that recorded as "dead" last spring have fallen to decay and are no longer part of the forest inventory. There seems to be a minimal number of seedlings to replace those lost. In the pole-sized and mature classes, it appears the white pine volume is unchanged.

Thousand Cankers Disease

Spring and fall trapping for the walnut twig beetle, vector of thousand cankers disease was completed, and samples were screened. Forty-one traps were set and were monitored for 4 weeks in spring and 3 weeks in fall, and were focused around wood product industries, campgrounds, and parks. Traps were serviced every 1 to 2 weeks, depending on the amount of rain that fell during the trapping period. Samples were processed and screened by the forest pathologist, forest entomologist, and the Plant Industries Division program specialist with the West Virginia Department of Agriculture. All samples screened were negative for the walnut twig beetle.

National Plant Protection Laboratory Accreditation Program—*Phytophthora ramorum*

Personnel from the West Virginia Department of Agriculture, Plant Industries Division, Plant Pathology Laboratory, participated again in the National Plant Protection Laboratory Accreditation Program at the U.S. Department of Agriculture, Animal and Plant Health Inspection Service (APHIS), Plant Protection and Quarantine, Center for Plant Health Science and Technology. West Virginia personnel were accredited in 2013 to perform validated diagnostic tests for the causal agent of sudden oak death.

Insects

Hemlock Woolly Adelgid (HWA)

With new detections in Ritchie, Jackson, Mason, and Putnam Counties, HWA can now be found in 46 WV counties. In 2013, WV Department of Agriculture released 1,437 adult *Laricobius nigrinus* beetles in Blackwater Falls State Park; 474 were cold-tolerant beetles from Idaho, and the remainder were from the Banner Elk, NC, area. Another 9,641 *L. nigrinus* were released by the National Park Service in and around the New River Gorge region. Finally, 500 *Laricobius osakensis* were released at Carnifex Ferry Battlefield State Park by an entomology graduate student from Virginia Tech. Previous release sites of *L. nigrinus* have yet to be monitored for predator survival and impact on HWA. *L. osakensis* monitoring did find several larvae in the spring.

West Virginia Department of Agriculture continued to treat high-value and high-visibility infested hemlocks with imidacloprid via soil injection, inserting CoreTect tablets into the soil, and trunk injections. Approximately 4,600 trees were treated at 23 sites: 16 public non-Federal, 2 Federal, and 8 private.

Jumping Oak Gall (*Neuroterus* spp.)

Jumping oak gall appears to exist in the entire State, with the possible exception of the northern panhandle counties. The only reported outbreak this year, however, was in Mercer County, near Princeton.

Emerald Ash Borer (EAB)

With new detections in Monongalia, Doddridge, Boone, and Jefferson Counties, EAB can now be found in 28 West Virginia counties. In 2013, parasitoid releases were continued by USDA APHIS. Results of previous releases are still pending.

Forest Fire

Wildfire suppression is one of the most important activities of the West Virginia Department of Forestry. In FY 2013, Department personnel and volunteers fought 875 wildfires that burned 18,864 acres. These fires caused $5.66 million in damages to the natural resources of West Virginia and over $306,000 in loss of personal property. The number of fires and acreage burned was about equivalent to the 10-year average. The leading cause of wildfires continues to be debris burning, which resulted in 297 wildfires that burned 2,326 acres. This number was 34 percent of the total number of wildfires. Arson

was the second leading cause of wildfires and burned the most acreage: 238 wildfires (27 percent of the total number) that burned 10,150 acres (54 percent of the total).

References

Land Cover Map:
U.S. Geological Survey. 2011. 2006 National land cover dataset. Sioux Falls, SD.

Forest Land Ownership, Forest Species Type:
U.S. Department of Agriculture, Forest Service. 2009. Forest resources of the United States, 2007. Gen. Tech. Rep. WO–78. Washington, DC. 336 p.

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